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ABSTRACT

The National School Boards Association (NSBA), the National School Boards Foundation, NSBA's Institute for the Transfer of Technology to Education, and Apple Computer, Inc., launched "The School Board of Tomorrow Exhibit" at NSBA's 1996 annual conference and exposition in Orlando, Florida. This handbook summarizes the communication technologies featured in the exhibit. The first part provides an overview of the five different environments simulated in the exhibit: a school board member's home office, the family education network (FEN), a superintendent's office, a school board meeting room, and a community forum. The second part of this guide contains five selected NSBA articles from "The Electronic School." The articles offer advice and information on hiring technical consultants for a school district, conducting successful bond campaigns, using e-mail to conduct school board business, and acquiring funding for technology. A list of technology providers is included. (LMI)

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School Board Of Tomorrow

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Anaheim, California ■ April 26–29, 1997

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School Board Of Tomorrow

Resource Guide

Sponsored by

National School Boards Association

National School Boards Foundation

NSBA's Institute for the Transfer of Technology to Education (ITTE)

Apple Computer, Inc., and associated companies

National School Boards Association Conference

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April 26–29, 1997

Foreword

Example is not the main thing in influencing others, it is the only thing.

—Albert Schweitzer

Helping school board members and other school leaders follow Schweitzer's advice to lead by example is the purpose of our School Board of Tomorrow Exhibit. The National School Boards Association's Institute for the Transfer of Technology to Education (ITTE) and the National School Boards Foundation have joined with Apple Computer, Inc., and other corporate partners in creating this exhibit to help inspire you and inform you about the many ways technology can make school leaders more effective.

This exhibit demonstrates how existing and emerging technologies can help school board members succeed in their roles as policymakers, elected officials, mediators, and public servants. Technology can help in interactions with students, teachers, administrators, parents, taxpayers, business leaders, and local and state politicians on topics ranging from textbooks and school boundaries to student–teacher ratios and student achievement. And by using technology to help you fulfill your leadership role during these times of significant change, you will model the behavior you ask of others who make technology an integral part of the education process in your school district.

We hope the School Board of Tomorrow Exhibit and these accompanying materials raise your awareness of how technology can help make your school board service even more meaningful.

Sincerely,

Anne L. Bryant
Executive Director,
National School Boards Association
Trustee, National School Boards Foundation

Mike Lorion
Vice President, Education Division
Apple Computer, Inc.

Table of Contents

The School Board of Tomorrow Exhibit Overview 1

Exhibit Showcase Areas 3

- The School Board Member's Home Office Desk 3
- The Superintendent's Office 6
- The School Board Meeting Room 9
- The Community Forum 11

Appendix: Technology Providers 15

Selected NSBA Articles* 17

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Chapter 14, entitled "A Focus on Technology," is from NSBA's book, *Becoming a Better Board Member*.

The School Board of Tomorrow Exhibit Overview

The National School Boards Association (NSBA), the National School Boards Foundation, NSBA's Institute for the Transfer of Technology to Education (ITTE), and Apple Computer, Inc., launched The School Board of Tomorrow Exhibit at NSBA's Annual Conference and Exposition in Orlando last year. Over 4,000 board members toured the exhibit to discover the exciting applications of technology for their personal and professional use and to meet with experts on such topics as campaigning, planning, effectiveness research, home learning, and many others.

The School Board of Tomorrow Project was featured in several state school board association conferences, and the exhibit guide has been distributed to over 20,000 school board members through presentations and mailings.

In an ongoing effort to inform school board members about technology, NSBA's *Electronic School* quarterly publication has featured, throughout the year, regular articles under the heading of "School Board of Tomorrow" that are reprinted in the second half of this resource guide. Included are articles with advice and information on hiring technology consultants for your district, conducting successful bond campaigns, using e-mail to conduct board business, and acquiring funding for technology.

This year the exhibit has been expanded to include new software for creating video and Web publishing, new products such as the eMate™ mobile computer, and new partners like the Family Education Network and The Little Institute for School Facilities Research.

The exhibit simulates four different environments that are quite familiar and are described below.

A **School Board Member's Home Office** showcases productivity and communication technologies, along with exciting resources for family computing. Dr. Bard Williams, noted education technology author and an education technology consultant for Apple Computer, is hosting the home office. Barbara Nelson, an expert in family learning solutions and author of an award-winning preschool technology program, is hosting the family computing area of this exhibit.

The **Family Education Network (FEN)** is new to the exhibit this year. The FEN is a Web-based service that brings schools, families, and communities together to help parents get more involved in their children's education. FEN offers a free turnkey solution to school districts that helps superintendents and school board members create a local online presence designed to provide families with a wealth of local, state, and national education information and resources. This unique service also includes the interactive communication tools needed to connect parents and concerned citizens in the community and across the country. FEN's vice president, Bob Block, will demonstrate the rich resources and be available to discuss ways in which FEN is partnering with districts and corporations to offer special programs for school districts.

A **Superintendent's Office** presents applications for administrative productivity. Dr. Charles Stallard, director of technology for Henrico County Virginia Schools, is hosting this area and will demonstrate how district administrators can use a variety of powerful solutions to increase productivity and provide effective tools for planning, governance, and administration. Henrico County Schools is a featured district in the ITTE Technology Leadership Network. Dr. Richard Thome, superintendent of Cardiff School District in southern California and an Apple Distinguished Educator, is a featured expert in the area of administrative technologies and will demonstrate a host of applications for administrative personnel.

A School Board Meeting Room models technologies that can make school board meetings more productive and improve the dialogue between board members and the community. Dick Moody, an education technology consultant for Apple's Western Education Region, is hosting this area. He was formerly the assistant executive director of the Washington State School Directors' Association and is a member of the NSBA's School Board of Tomorrow Advisory Board.

Featured presentations include the beta release of NSBA's Education Leadership Tool Kit: Change and Technology in America's Schools. The Web-based toolkit sets the process of technology planning and implementation in the larger context of systemic change and strategic planning. It covers a range of technology-related topics, including models of successful school programs that use technology and research findings on the impact of technology on educational processes and outcomes. Hilary LaMonte is creator of the Education Leadership Tool Kit and a manager in NSBA's Institute for the Transfer of Technology to Education. She will be on hand to orient exhibit visitors to the rich resources of this online toolkit and to show how school board members can use it to lead more effectively in their districts.

The Little Institute for School Facilities Research, formed in 1996, is a North Carolina nonprofit corporation created to improve the body of knowledge surrounding school facilities issues and to serve as a public resource for organizations and individuals seeking to use this knowledge to improve educational opportunities for all learners. The Little Institute recently published *The School Design Primer*, a planning handbook for elected school officials and school facility professionals. The handbook covers topics as diverse as selecting school sites, vandalism prevention, and contracting with architects. Gary L. Hubler, AIA, is president of the School Division of Little & Associates Architects, the largest architecture and engineering firm in the Carolinas, based in Charlotte, North Carolina. His division specializes in intelligent designs for public and private primary and secondary schools and in four decades has completed more than $650 million in school building construction. Gary is also the founder of The Little Institute for School Facilities Research. Gary will be available to orient exhibit visitors to *The School Design Primer* and answer questions related to effective school design for 21st-century schools.

A Community Forum focuses on technology that allows instant access to vast resources of information and people through the Internet. The exhibit includes powerful, affordable technologies that can impact the productivity and effectiveness of school boards. In just the past year, a host of new Web sites, software tools, and hardware products are making information access and publishing easier, more productive, and portable. John Santoro, an expert on the Internet and multimedia technologies, is hosting this area.

NSBA staff working in the School Board of Tomorrow Exhibit include Ann Meier Baker, director, National School Boards Foundation; and Cheryl Scott Williams, director, Institute for the Transfer of Technology to Education.

Jolaine Harbour, manager of Apple's Education Strategic Relations programs, is the Apple sponsor of the exhibit and the School Board of Tomorrow Project.

Apple and NSBA staff will provide orientation sessions in the School Board of Tomorrow theater, every half hour throughout the exhibit.

Since school districts typically have a mix of computing systems, we have taken great care to feature cross-platform solutions. In addition, most of the peripheral devices selected, as well as Apple's new eMate 300 student computer, are compatible with both Macintosh® and Windows operating systems.

Exhibit Showcase Areas

The Home Office

Overview

This area presents a typical school board member's home office with a desktop computer, laser printer, and a portable computer for use away from the office. The computers contain a collection of software applications that enhance personal and professional productivity, as well as facilitate communication with the community and the outside world. Also in this office are other useful tools: a fax machine, a cellular telephone, an answering machine, a pager, and a palmtop computer. Many technologies can be used in a home office that cannot be seen, such as a fax card installed inside the printer that adds plain paper fax machine functionality to the printer, or a telephone answering machine installed inside the computer.

The Family Computing Corner, next to the School Board Member's Home Office Desk, has been designed to demonstrate how the entire family can benefit from use of learning programs, multimedia authoring and presentation tools, home finance software, and Internet access.

Equipment that you see in this area

The equipment includes an Apple® Power Macintosh™ 7300 desktop computer with an AppleVision® 1710av monitor connected to an Apple Color StyleWriter® 2500 printer. Also included are a fax machine, a portable scanner, wireless networking, and an Apple Newton® MessagePad® 2000 handheld computer. The key technologies showcased here are listed below.

School Board Member's Home Office Desk

Key technologies and their benefits

1. Integrated Software Packages. Provide a single integrated application that offers the most common personal computing functions, including word processing, budgeting and spreadsheet analysis, database creation, drawing, graphics, and communications. With these easy-to-use applications, you can seamlessly combine text, graphics, spreadsheets, tables, and charts all within the same document if you choose. This type of software allows school board members to transform text and raw data into a professional-looking publishable report or document.

Software products for consideration

ClarisWorks 4.0 by Claris Corporation (showcased)
Microsoft Office by Microsoft Corporation

2. Relational Databases. Easy-to-use customizable databases let you organize and access information from multiple files in any number of ways. When you change information in one file, it automatically changes in any other related file. A database might be used to keep track of mailing lists, school or personal records, or equipment and school assets.

Software products for consideration

FileMaker Pro 3.0 by Claris Corporation (showcased)

3. E-mail and Online Services. Online services provide electronic-mail access as well as access to a wealth of information resources for a basic monthly fee of about $10. Internet access usually costs about $20 a month. Electronic mail enables a school board member to receive information and communicate almost instantaneously with anyone else who has an e-mail account. It also provides a means of communicating with people who may not be available to talk at a specific time. Some of these applications need access to an Internet service provider. You can find further information on Internet resources under Connecting to the Internet in the "Community Forum" section of this guide.

Online and e-mail service products for consideration

America Online (showcased)
Claris Emailer by Claris (showcased)
Microsoft Exchange by Microsoft
FirstClass by SoftArc (showcased)
QuickMail by CE Software
Eudora Pro 3.0 by Qualcomm

4. Remote Network Access. This application allows access to entire networks of computers by dialing in from a remote location. School board members might use this to access, from their home computer, information or applications stored on a computer at the district office or at a school site. These products are also used to provide remote technical support from the school district to a school board member who has encountered technical difficulties while working at home.

Products for consideration

Apple Remote Access by Apple Computer, Inc. (showcased)
Timbuktu by Farallon Computing

5. Desktop Scanning. With the addition of a small, portable device that sits in front of the monitor, it is now possible to scan a multitude of documents into the computer, reducing the need to keep large documents and assorted piles of paper. With a small portable or flatbed scanner, papers and documents can be organized in a logical manner, as well as accessed quickly and efficiently.

Products for consideration

Visioneer PaperPort Vx Scanner with Internet Capabilities by Visioneer (showcased)
HP ScanJet 4s Scanner by Hewlett-Packard
Apple Color OneScanner™ by Apple Computer, Inc.

6. Personal Information Management Software. This type of software enhances personal time and resource management by seamlessly integrating address and telephone lists, schedules, to do lists, and notes into one complete solution. A school board member can use these tools to schedule meetings or quickly look up a telephone number. The most current products allow use of the calendar features over the World Wide Web.

Software products for consideration

Claris Organizer 2.0 by Claris Corporation (Showcased)
Microsoft Scheduler 7.0 by Microsoft
Now-Up-to-Date and Now Contact by Now Software (Showcased)
Day Timer 2.1 by Day Timer Technologies
ACT! by Symantec
In Touch 2.5
DateView 2.6

Hardware products—Handheld electronic organizers

Apple Newton MessagePad 2000 by Apple Computer
Pilot 1000 & 5000 by US Robotics
Additional products by Psion, Hewlett-Packard, Rolodex, and Casio

7. Personal Finance Software. This software organizes and keeps track of your personal finances, including checking accounts, credit cards, and investments. These powerful, easy-to-use tools can help you keep your personal finances in good order.

Software products for consideration

Quicken 7.0 by Intuit, Inc. (showcased)
Wall Street Investor by Comstar

Family Computing Center

Overview

This area presents various educational and entertainment software applications designed to stimulate home learning. These applications can be used to supplement a child's school learning, as well as to provide a focus for family activities.

Equipment that you see in this area

There are two Apple Power Macintosh® computers: the Power Macintosh 5500 and the Power Macintosh 6500, both with an Apple Multiple Scan 15av monitor. The 5500 is connected to an Apple Color StyleWriter 2500 inkjet printer, a low-cost printer suitable for home use. The 6500 is connected to cable TV to demonstrate built-in color TV and multimedia capabilities. Each is loaded with the applicable software to showcase technologies described below.

Key technologies and their benefits

1. **Information Reference and Educational Learning CDs and Software.** CDs now bring vast amounts of information much closer to the fingertips of school board members and their families. Large dictionaries and entire sets of encyclopedias can be contained on a single CD. Textual information is brought to life with the addition of sound, animation, color images, and video clips.

Software products for consideration

1997 Multimedia Encyclopedia by Grolier (showcased)
TIME Multimedia Almanac Reference Edition by SoftKey
Electronics Arts 3D Atlas (showcased) by Electronic Arts
On Campus 96 by Kaplan (showcased)

2. **Family Access to the World Wide Web.** Families can now access the rich resources of the Internet's World Wide Web right from the comfort of their own homes. Using popular World Wide Web browsers such as Netscape Navigator™ and associated software such as SurfWatch that prevents access to inappropriate sites for children, parents can now encourage their children to explore cyberspace with peace of mind.

Software products for consideration

Netscape Navigator 3.1 by Netscape (showcased)
Internet Explorer by Microsoft (showcased)
SurfWatch by SurfWatch (showcased)

The Superintendent's Office

Overview

Superintendents in many cases have the responsibility of running the biggest business in town. Educational leaders need powerful tools to access information, analyze trends, plan, track budgets, produce the payroll, track expenses, and handle a multitude of other tasks. They also often need to tap into a district intranet, the Internet, or large mainframe computer systems to access or share data.

The Superintendent's Office shows a variety of technologies that are relevant to the daily activities of a superintendent and his or her staff. These range from basic applications such as electronic mail or calendar software to complex relational databases. Many of these applications are designed to enable a busy superintendent to function effectively virtually anytime, anywhere.

Some lighthouse districts have progressed in their use of complex applications to better serve the needs of their entire communities. Dr. Charles Stallard of Henrico County Schools in Virginia will demonstrate a wide variety of ways that technology can enhance productivity in district administration, communications, and governance.

Hampton City Schools in Virginia, for example, digitally archived volumes of policy and state education memoranda by scanning printed documents into a database and used AppleSearch® software to index the documents. Now, board members simply enter key words to search for and quickly retrieve all related policies.

This area has two desks, a superintendent's desk and an assistant's desk. Both machines run software applications that help accomplish the daily tasks in the office.

Equipment that you see in this area

Superintendent's Desk: An Apple Power Macintosh 8600 computer with an Apple 17"10.s multiscan monitor along with a PowerBook® 1400c. This technology enables the superintendent to take advantage of the best of both worlds: high-end desktop computer to use in the office and a powerful PowerBook computer to use in the field. The superintendent can also use these powerful computers for multimedia presentations at remote sites. Both computers are networked to a LaserWriter® 16/600 PS printer. Also showcased are an electronic white board connected to the PowerBook, a speakerphone, a cellular phone, and a Pilot.

Assistant's Desk: The Apple Power Macintosh 7300 PC Compatible computer with a 17" multiscan monitor connected to a flatbed color scanner, the Apple Color OneScanner, are featured here. This Macintosh computer features a cross-platform DOS compatibility card running Windows 95. This enables those working on a Macintosh not only to share data and files with someone working on a Windows machine, but also to run Windows applications directly on an Intel P166 MHz card installed in the Power Macintosh computer.

The software solutions shown in this area are described below.

Key technologies and their benefits

1. Electronic Mail and Messaging. A powerful, high-performance, multiplatform communications system often integrates e-mail, messaging, conferencing, discussion databases, forms processing, online information services, and remote access. Software such as FirstClass that is widely used in schools provide an effective means of communication within a school as well as within and across school districts. E-mail applications also provide access to other schools across the country. Superintendents can remain better informed by using e-mail to stay on top of developments in the district; to communicate, publish, or disseminate information electronically; to access large discussion groups; and to seek technical assistance from a support help desk.

Products for consideration

FirstClass 3.5.1 by SoftArc (showcased)
QuickMail 3.6 by CESoftware
GroupWise 5 by Novell
ListStar 1.1 Mail by Quarterdeck
Microsoft Exchange by Microsoft
Eudora Pro 3.0 by Qualcomm

2. Intranet/Internet Technologies. The Internet provides vast amounts of information on almost any subject, and for this reason many educators are turning to it as a reference tool. Many districts are also building districtwide intranets, private networks based on the same technologies used to drive the Internet. Intranets offer the opportunity to build a private, powerful, high-performance, multiplatform communications system that often integrates many of the disparate communications services offered by districts today.

Products for consideration

Netscape Navigator 3.0 (showcased) by Netscape
Kent School District Intranet Site
Microsoft Internet Explorer 3.0 by Microsoft

3. Databases. Shared databases can be set up over a standard network and accessed through the local network, from a remote site, or over the Internet. These types of databases could be used to assess curriculum development, track project assignments and associated costs, or allocate human resources.

Charles Stallard will show databases used for a variety of purposes, including substitute teacher management, textbook ordering, curriculum development, project management, grant proposal writing, and accessing school board policies.

Products for consideration

FileMaker Pro 3.0 by Claris Corporation (showcased)
AppleSearch by Apple Computer, Inc. (showcased)
Apple Remote Access by Apple Computer, Inc. (showcased)
OneWorld Group Fax Network Modem by Global Village (showcased)

4. Scheduling Software. Groups of people can now be networked together (regardless of the type of computer) for the purposes of planning, scheduling, and confirming meetings without ever leaving the office. Scheduling software can be used to manage personal schedules, meeting rooms, facilities, and school and district calendars. Group meetings can easily be set up and verified with very little effort, time, or trouble.

Products for consideration

Meeting Maker 4.0 by On Technology (showcased)
Microsoft Schedule by Microsoft Corporation

5. Administrative Solutions. A variety of software applications are designed specifically for handling the administrative matters associated with running a school or a school district. These programs enable easy tracking of school attendance, schedules, student profiles, grades, and class schedules.

Products for consideration

MacSchool 3.2 by Chancery Software (showcased)
SASI 5.2 by NCS

6. Cross-Platform Compatibility. Macintosh computers have the ability to run "cross-platform" applications on a single computer, that is, to run software applications from another operating platform such as DOS or Windows. For instance, it is possible to run both Macintosh applications and Windows 95 applications at the same time on certain Macintosh computers. This feature offers the advantage of running applications designed for either environment without the cost of having two separate computers. It provides added flexibility for people who work in a multiplatform environment.

Products for consideration

Apple PC Compatible Card P166 by Apple Computer, Inc. (showcased)
OrangePC 400 & 500 Card by Orange Micro
SoftWindows™ 95 4.0 by Insignia Solutions (showcased)

7. Word Processing and Desktop Publishing: A variety of cross-platform word processing and integrated software packages allow users to create newsletters, flyers, reports, and professional-looking documents with charts, graphics, and photos. Often used by administrative staff, these tools enable anyone to produce polished documents quickly and easily.

Products for consideration

ClarisWorks 4.0 by Claris Corporation (showcased)
PageMaker by Adobe (showcased)
MacWrite Pro by Claris (showcased)
Microsoft Word by Microsoft (showcased)
Microsoft Excel by Microsoft (showcased)
WordPerfect Suite 7 by Corel (showcased)

8. White Board Technology. Electronic white boards that capture your pictures, diagrams, plans, or meeting notes and save them on a computer to be printed out or electronically distributed have replaced the traditional blackboard and chalk. Also, it is possible to project from the computer to the white board and use the touch screen sensitivity of the white board to manipulate the computer. This technology is particularly useful in capturing information written on a white board during meetings or for projecting information so that a larger group can see.

Products for consideration

Smart Board by Smart Technologies Inc. (showcased)
SoftBoard 200 Series & 400 Series by Microfield Graphics, Inc.

School Board Meeting Room

Overview

Building public confidence in schools is a major concern of the National School Boards Association, individual state associations, and local school districts.

Your school board meeting is central to building that public confidence. When you participate in efficient, orderly, and productive meetings, the public sees how their schools are governed. Clear and concise communications is critical to that process. How you gather, analyze, and disseminate information during your meetings is essential to that communications process. Your school board meeting can become a showcase of the technologies your teachers are using to increase the knowledge and skills of the community's children. In doing so, school board members become familiar with and use classroom technologies for policy and administrative purposes, and the public sees how its tax dollars are being spent to improve student learning.

Using the multimedia technology of your classrooms will help your school board in its four critical roles as governors of public education:

Vision. Technology planning as part of a district's strategic plan helps keep the school board focused on improvements in student learning. Presentation tools for clear communications throughout the process will help in developing a workable plan.

Structure. School District Policy establishes the structure for the learning environment. Database retrieval of policy documents and supporting information provide decision makers with information when they need it.

Advocacy. Portable technology makes delivering your message to the community easier and provides a more powerful presentation that is better remembered than a speech delivered from 3 x 5 cards.

Accountability. Demonstrating the technology that you ask voters to fund through bond and levy elections shows your community what it is supporting and how its use improves student learning.

A variety of tools and technologies are showcased to enhance the experience of anyone attending a local school board meeting. Included are new, powerful mobile computing tools to aid in accessing information; creative techniques for presenting information to the board or the community in an attractive, easy-to-read, persuasive format; projection equipment that enables computer presentations as well as three-dimensional objects to be seen by a group; sound systems that can be easily transported from one location to another; and systems for easily and inexpensively polling public opinion on controversial school district issues.

Equipment that you see in this area

A variety of mobile solutions for use at school board meetings. Included is a portable computer, in this case a PowerBook 3400c; a handheld computer, in this case an Apple Newton MessagePad 2000; electronic opinion polling devices; a digital camera that can be used for both still photos and full-motion video conferencing; a variety of projection equipment; and portable sound systems.

Key technologies and their benefits

1. **Mobile Computing Solutions.** While maintaining the power of the desktop machine and being lightweight and compact in size, the latest version of portable computers offers the ultimate in mobile computing. In this case, a PowerBook 3400c connected to a cellular phone for wireless access to a remote desktop computer enables computing

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anywhere, anytime, with access to almost anything needed in an office. This technology gives the school board member the ability to travel frequently and still be informed. On a portable computer, it is possible to create professional and engaging multimedia presentations, access large amounts of information from the school or district network, communicate with almost anyone anywhere through electronic mail, and access the vast resources of the Internet.

Products for consideration

Communications software

Apple Remote Access or A.R.A. by Apple Computer, Inc. (showcased)

First Class by SoftArc (showcased)

QuickMail by CESoftware

GroupWise by Novell

Microsoft Exchange by Microsoft

Presentation software

Persuasion 4.0 by Adobe (showcased)

MacroMind Director by MacroMedia

PowerPoint by Microsoft

2. Handheld Computing. The Apple MessagePad 2000, running the latest Newton operating system, offers advanced handwriting recognition, as well as a variety of practical, time-saving functions to keep you well organized throughout your day. A personal digital assistant such as the Apple MessagePad allows you to have a large selection of productivity, finance, time and information management, electronic reference, document publishing, and communication software all in the palm of your hand. This enables the school board member to have instantaneous access to pertinent information, financial records, and critical schedules. It also provides the ability to send or receive data anywhere, anytime, such as prior to an important school board meeting.

Products for consideration

Apple Newton MessagePad 2000 by Apple Computer, Inc.

Pilot 1000 & 5000 by Pilot

Additional products by Psion, Hewlett-Packard, Rolodex and Casio

3. Electronic Opinion Polling. Public opinion in the school district community can be gauged easily, quickly, and relatively inexpensively using technologies such as KeyPad Polling and Voice Polling. Using either telephones or keypad devices connected to a DOS-compatible Macintosh or a DOS or Windows machine, it is possible to collect, tally, and graphically display on a large projection screen up-to-the-minute results of a community opinion poll. Using these technologies, a school board can poll its community on a particular issue by voting during an actual meeting or by soliciting votes via the telephone.

Products for consideration

KeyPad Polling by Voice Poll Communications (showcased)

4. Projection Equipment. Old-fashioned slide or overhead projectors have been surpassed by newer technology that enables images to be projected directly from a computer, allowing last-minute changes to the content of the presentation. This also allows projection of full-color and full-motion video. A desktop projector can be connected to a Macintosh or a DOS or Windows computer. Additionally, it is now possible to project printed documents or three-dimensional objects to clearly demonstrate something to an audience. In this exhibit, a Visualizer, manufactured by Elmo Corporation, is connected to a 27-inch NTSC Sony monitor to project the demonstration of the Apple MessagePad.

Products for consideration

For projecting from a computer

Proxima DeskTop Projector (showcased)

Infocus

Sharp

For projecting opaque or three-dimensional objects

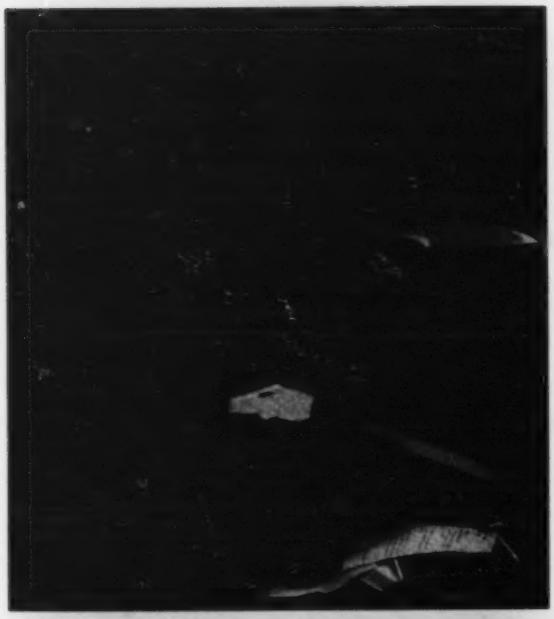
Elmo Visualizer by Elmo Corporation (showcased)

5. Portable Sound Systems. As attendance at school board meetings grows, it is often necessary to provide adequate sound systems for the community to hear what is going on. Featured here are audio sound systems (with speakers) and wireless Lavilier microphones that can be easily set up in different locations as the school board meeting moves from one place to another.

Products for consideration

Voyager Model PB-30AW Speakers by Anchor Audio, Inc. (showcased)

LM-40 WB-11 Wireless Lapel Mic by Anchor Audio, Inc. (showcased)



Community Forum

Overview

Perhaps one of the most exciting applications of technology for school board members is enhancing communications with various constituencies. The Community Forum area showcases key technologies that allow a board member to gather information from or communicate with the community, as well as with people and resources far beyond the boundaries of the local community.

The resources highlighted in this area allow board members to communicate with the community in several ways. Given the vast reach of the Internet, home-page creation will be featured. Additionally, low-cost video creation and editing will be shown.

A spotlight will also be brought to ways technology can benefit election campaigning. It enables a school board member to find voters and communicate with them, research issues and statistics, create and distribute printed and digital messages to a large number of constituents, prepare speeches, and communicate instantly with the media. Technology offers the perfect solution to the low-budget campaigns of school board members.

As broadband networks develop to allow transfer of large amounts of digital information, use of technology such as video conferencing will become commonplace in daily communications. Today, video conferencing makes it possible to bring real conversations and people into an office or meeting setting. More important is the ability to share live documents and collaborate on their development.

Finally, technology that allows the students to perform research in the community will be shown. Using a four-pound computer, students can gather data from the surrounding area and bring it back to the classroom for further analysis.

Equipment that you can see in this area

An Apple Power Macintosh 6500 computer with Apple's 1710av color monitors showcasing media access on the Web. You can also see an Apple Power Macintosh 6500 machine using Apple 1710 multiscan monitors creating multimedia while two Power Macintosh 5500s are used to access the Internet for desktop publishing and creating home pages on the World Wide Web.

Also showcased in this area is one of Apple's newest mobile solutions, the eMate 300, which is designed for education by educators, and the Apple Color LaserWriter 12/600 for high-speed, high-quality color printing.

Key technologies and their benefits

1. Video Creation and Editing Software/Hardware.

There is no better way to communicate with a large number of people than by using videotape. This solution area shows how creating and editing videos can now be an affordable and fun proposition.

Products for consideration

AVID Cinema by Apple Computer, Inc. (showcased)

2. Student Involvement in the Community.

Until now, computer technology has been limited to the school site. Whether in the classroom or a special lab, computers could only be used within the walls of the school. The eMate 300 mobile computer changes everything by allowing students to use technology anytime, anywhere. This lightweight device allows students to gather data from around the community, conduct science experiments, and chart their results all using a tool designed to handle the rigors of daily student use.

Products for consideration

eMate 300 by Apple Computer, Inc.
eProbe by Knowledge Revolution

3. Publishing on the World Wide Web. Using the technologies showcased here, school board members can create their very own home pages. A home page works well to communicate a platform to the local constituency in board campaigns. School districts can create a home page to publicize the accomplishments of teachers and students. A Web page can also be used to facilitate communication between the school board and community.

4. School Home Pages. The number of new Web sites or home pages produced and maintained by school districts, high schools, and even elementary schools has increased rapidly. Nationally and internationally, schools of all sizes are posting their information to the World Wide Web, creating a true community of minds and spirits dedicated to quality education.

The epicenter of these school-based sites is a special Web site called Web66 (http://web66.coled.umn.edu/) that is maintained to provide a true resource for school-based Internet information. One of the most compelling links on this page is the International Registry of K-12 Schools on the Web. This link will take you to a compilation of all the school-based Web sites in the world.

A visit to just a couple of these sites will show you examples of excited, motivated students who are learning how to report school news, present their school's major issues, and share the results of collaborative projects with the world. Some first stops we suggest are:

Highland Park Elementary School, Austin, Texas
http://www.hipark.austin.isd.tenet.edu/home/main.html

Fairbanks North Star Borough School District, Alaska
http://www.northstar.k12.ak.us/

Products for consideration

HomePage by Claris (showcased)
PageMill 2.0 by Adobe
Visioneer PaperPort Vx Scanner by Visioneer (showcased)
SiteMill 2.0 by Adobe (showcased)
SurfWatch by SpyGlass (showcased)
WebSTAR 2.0 by Quarterdeck
WordPerfect 6.0 by Novell (showcased)

The World Wide Web offers access to enormous amounts of information and resources. A few that are particularly relevant to the interests of school board members are showcased here.

5. Browsers. Many computers in this exhibit are set up with a network browser and preset bookmarks that give you easy access to relevant URLs (or home-page addresses). Additional software, in this case, SurfWatch, has been added to limit access to inappropriate sites.

Netscape Navigator by Netscape is a multiplatform application or browser for personal computers that serves as the interface to the increasingly popular portion of the Internet called the World Wide Web (WWW). Navigator displays the highly graphical information found on WWW server computers on the Internet, called Web sites. Other browsers are available, but because Navigator was distributed free of charge, by early 1995 it had become the software of choice for people browsing the Internet.

Users can easily browse or "surf" the WWW by pointing and clicking on highlighted text on a home page. That is, by clicking on highlighted text the user can jump from one location on the WWW to another automatically. The combination of easily displayed and searchable Internet data has vastly reduced the complexity of the Internet, bringing it into the realm of the average personal computer user.

The ease of operation for the end user has exponentially expanded the number of users of the Internet to the point that businesses, schools, and organizations of all types now enjoy large electronic audiences. Board members can use this powerful medium to expand communication with a variety of constituents.

Products for consideration

Netscape Navigator 3.1 by Netscape (showcased)
Microsoft Explorer by Microsoft
CyberFinder by Aladdin

6. Security on the Internet. Parents, teachers, and school administrators are concerned about the unlimited access to sites on the Internet that may be inappropriate for children. To address this concern, a variety of new software products have been developed, including SurfWatch.

SurfWatch is one of a growing number of applications that allow schools, homes, and others to prevent access to undesirable areas of the Internet. These programs use various technological strategies to block communication with selected Internet sites essentially by keeping track of the Internet address of these sites and then instructing the user's Internet software to prevent communication with them.

The sites that can be blocked by these programs are updated on an ongoing basis through a subscription service with the vendor.

Many schools and organizations in communities where the open nature of the Internet has become an issue can continue to make the vast resources of the Internet available to their users while feeling secure that objectionable material is less likely to be viewed with these products.

7. Connecting to the Internet. Connecting to the Internet has remained a mystery to a large number of potential Internet surfers for a number of reasons, including the complexity of Internet software, lack of knowledge of which software to buy, and whom to contact to obtain an Internet connection.

Almost any bookstore will stock book/software all-in-one products that contain generally available "shareware" and the instructions on how to install and use it to get on the Internet. Apple Computer, Inc., has gone a step further and developed the Apple Internet Connection Kit by selecting and thoroughly testing software that will give the user an optimal connection to the Internet—including contact information to quality Internet providers.

8. Election Campaigning Using Technology. The key to a successful campaign is being able to communicate with the community. Technology can play a major role in allowing you to spread your message. In addition to the video creation and home-page creation shown in other parts of the area, desktop publishing is featured here. To augment the normal text and graphics found in most flyers, a digital camera will be shown that allows you to add full-color images to any document.

Products for consideration

QuickTake® 200 by Apple Computer, Inc.
Color LaserWriter by Apple Computer, Inc.

Summary

This exhibit showcases a variety of simple, easy-to-use technologies that support the work of school board members and superintendents. We hope we have succeeded in providing a glimpse of how technology can make life easier and more productive as school board members and superintendents continue to work to improve the quality of education in schools for generations to come.

Appendix

List of Technology Providers

NOTE: Companies marked with names listed in BOLD TYPE have been actively involved in supporting this School Board of Tomorrow Exhibit by donating equipment, software, and technical expertise.

Adobe Systems Incorporated
1585 Charleston Road, P.O. Box 7900
Mountain View, CA 94039-7900
(415) 961-4400
www.adobe.com

AEC Software
22611-113 Markey Court
Sterling, VA 20166
(800) 346-9413
www.aecsoft.com

Aladdin Systems, Inc.
165 Westridge Drive
Watsonville, CA 95076
(408) 761-6200
www.aladdin.com

America Online, Inc.
8619 Westwood Center Drive
Vienna, VA 22182
(800) 827-6364
www.aol.com

Anchor Audio, Inc.
923 W. 223rd St.
Torrance, CA 90502
(310) 533-5984

Apple Computer, Inc.
One Infinite Loop
Cupertino, CA 95014
(408) 996-1010
www.apple.com

Casady & Greene
22734 Portola Drive
Salinas, CA 93908-1119
(408) 484-9228
www.casadyg.com

CE Software
435 Washington Street
Somerville, MA 02143
(617) 492-4999
www.ce.com

Chancery Software Inc
4170 Still Creek Drive, Ste. 450
Burnaby, BC, Canada V5C 6C6
(604) 294-1233
chancery@applelink.apple.com

Claris Corporation
5201 Patrick Henry Dr.
Santa Clara, CA 95052-8186
(800) 544-8554
www.claris.com

CompuServe
5000 Arlington Centre Blvd.
Columbus, Ohio 43220
(800) 609-1674
www.compuserve.com

Connectix Corporation
2655 Campus Drive
San Mateo, CA 94403
(800) 950-5880
www.connectix.com

DataViz Inc.
55 Corporate Drive
Trumbull, CT 06611
(203) 268-0030
www.dataviz.com

DK Multimedia, Inc.
95 Madison Avenue
New York, NY 10016
(800) DKMM 575
www.dk.com

Edmark
P.O. Box 97021
Redmond, WA 98073-9721
(206) 556-8400
www.edmark.com

Electronic Arts
P.O. Box 7578
San Mateo, CA 94403
(415) 572-2787

Fairfield Language Technologies
122 South Main Street
Harrisburg, VA 22801
(800) 788-0822
www.trstone.com

Family Education Network
20 Park Plaza, Suite 1215
Boston, Massachusetts 02116
(617) 542 6500
www.familyeducation.com

Farallon Computing
2470 Mariner Square Loop
Alameda, CA 94501
(510) 814-500
www.farallon.com

Global Village
1144 E. Arques Ave.
Sunnyvale, CA 94086
(800) 640-4562
www.globalvillage.com

Grolier Inc.
Sherman Turnpike
Danbury, CT 06816
(203) 797-3500
www.grolier.com

IMSI
1895 Francisco Blvd. East
San Rafael, CA 94901-5506
(415) 257-3000
www.imsisoft.com

Insignia Solutions
1300 Charleston Road
Mountain View, CA 94043
(415) 335-7100

Intuit
P.O. Box 3128
Lisle, IL 605
(800) 462-6765
www.intuit.com

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Kaplan
888 Seventh Avenue
New York, NY 10106
(800) 527-4836
www.kaplan.com

Little Institute for School Facilities Research
Little & Associates Architects
5815 Westpark Drive
Charlotte, NC 28217
(704) 525 6350

MacroMedia
600 Townsend
San Francisco, CA 94103
(415) 252-2000
www.macromedia.com

Microsoft Corporation
One Microsoft Way
Redmond, WA 98052
www.microsoft.com

Microfield Graphics Inc.
9825 SW Sunshine Ct
Beaverton, OR 97005
(503) 626-9393

NCS
11000 Prairie Lakes Drive
Eden Prairie, MN 55344
(800) 431-1421

Netscape Communications Corporation
501 E. Middlefield Rd.
Mountain View, CA 94043
(415) 528-2555
www.netscape.com

Nolo Press
950 Parker Street
Berkeley, CA 94710
(510) 549-1976
noloinfo@nolo.com

Novell, Inc. Corporate Headquarters
1555 North Technology Way
Orem, UT 84057 USA
(801) 429-7000
www.novell.com

Now Software, Inc.
921 S.W. Washington Street, Suite 500
Portland, OR 97205-2823
(503) 274-2800

On Technologies
One Cambridge Center
Cambridge, MA 02142
(617) 374-1400

Orange-Micro
1400 N. Lakeview Ave.
Anaheim, CA 92807
(714) 779-2772
www.orangemicro.com

Personal Training Systems
1005 Hamilton Court
Menlo Park, CA 94025
(800) 832-2499
www.ptst.com

Proxima Corporation
9440 Carroll Park Dr.
San Diego, CA 92121-2298
(619) 457-5500

Quark, Inc.
1800 Grant Street
Denver, Colorado 80203
(303) 894-888

Quarterdeck
5770 Roosevelt Blvd, Bldg. #400
Clear Water, FL 34620
(800) 683-6696
www.quarterdeck.com

Reply Corporation
4435 Fortran Drive
San Jose, CA 95134
(800) 955-5295
www.reply.com

SkyTel Communications
200 S. Lamar St.
Jackson, MS 39201
(800) 203-7886
www.skytel.com

SMART Technologies
Suite 600
1177 - 11th Ave. SW
Calgary, AB, Canada
(403) 245-0333
www.smarttech.com

SoftArc Inc.
100 Allstate Parkway
Markham ON L3R 6H3, Canada
(905) 415-7000
www.softarc.com

SoftKey
One Athenaeum Street
Cambridge, MA 02142
(800) 227-5609
cust_serv@learningco.com

SpyGlass, Inc.
175 S. San Antonio Road, Suite 102
Los Altos, CA 94022
(415) 948-9500

T/Maker Company
1390 Villa Street
Mountain View, CA 94040
(415) 962-0195
www.macfaq.com/vendor/software/1067.html

U.S. Robotics
605 N. 6500 W.
Salt Lake City, UT 84116
(847) 982-5151
www.usrobotics.com

Visioneer
2860 West Bayshore Road
Palo Alto, CA 94303
(800) 787-7007

VIZ-Soft Development
P.O. Box 5151
Walnut Creek, CA 94596
(510) 210-0600
www.vizsoft.com

Voice Poll Communications
1025 Angle Lane
Everett, WA 98201
(206) 259-4205

VolaTec Inc.
35 Industrial Parkway
Northvale, NJ 07647
(201) 768-9400
www.vocaltec.com

Zane Publishing
1950 Stemmons, Suite 4044
Dallas, TX 7207
(214) 800-6000

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Selected NSBA Articles

Selling Technology Bonds

Here's how to get the voters on your side

By Kevin Bushweller

In Austin, Texas, voters pass a $369 million school bond—the largest in district history—and a sizable chunk of it is earmarked for technology improvements. After five consecutive education bond losses at the polls, Monroe County (Wash.) school activists engineer a sophisticated bond campaign that yields $500,000 for technology upgrades. In Cobb County, Ga., school supporters counter aggressive opposition to pass a bond issue that includes $32 million for new technology.

Even in California, where passing a bond referendum requires a supermajority of two-thirds of the voters, districts are passing bonds, and many of the successful measures include millions of dollars in technology upgrades. The lesson: Even in the face of seemingly insurmountable electoral odds, voters can be persuaded to support school technology.

That's not to say that winning bond elections is getting any easier. In many places, in fact, anti-tax activists and cash-strapped voters have crushed school bond efforts and discouraged other districts from even putting bond issues on the ballot. Even so, it is possible to pass bonds to help upgrade your district's technology. So if you're considering this technology funding option, take a lesson from districts that have succeeded.

Know your community

To begin with, consultants and school activists generally say money for technology should be included as part of a larger bond package. In more traditional communities, where many people appear to doubt the effectiveness of technology, asking voters to approve a technology-only bond is a recipe for failure, consultants say. But technology can be used as a sales feature in a progressive, pro-technology community. Including technology funding as part of a larger package helps bring other much-needed improvements to schools, such as additional classrooms or new sports facilities.

With that in mind, Austin school officials broke this year's historic bond issue into three separate proposals: Proposition 1 provided $121 million for renovation of existing schools, proposition 2 asked for $177 million for new schools and additions to current schools, and proposition 3 provided $72 million for security and technology upgrades. (About $26 million was for technology.) Voters cast ballots for or against each of the separate proposals. All three were passed by voters.

"We have the advantage of having one of the most [technologically] networked communities in the state," says Elizabeth Christian, former cochair of Austinites for Our Schools, a political action committee that was formed to win the bond. "Austin is a very high-tech community."

By separating the three proposals, Christian says, bond supporters had three selling features to bring people to the polls. City residents who were coming to vote primarily for the technology features of the bond, supporters figured, would also support the other two proposals. Equally important was that more than half the money in proposition 3 was for school security, an issue of deep concern to parents in an urban area like Austin. Many parents, Christian says, probably voted for proposition 3 for that reason alone.

The bond package was designed after exhaustive research into what the schools needed, and what the voting community would support. Once it was all put together, it was time to sell it to the public.

The first step in a successful bond campaign—whether the funds are for technology or new schools or both—is to identify two people who know a lot of voters in the community and ask them to head the bond campaign committee, says Christian, who runs her own public relations consulting business and has a daughter and son in the Austin schools.

As cochair of the committee herself, Christian spearheaded a fund-raising campaign, soliciting donations from individuals, corporations, neighborhood groups, men's and women's clubs, and PTAs. The PAC raised about $300,000 and spent $100,000 of it on television advertisements, she says.

The PAC wanted to reach as many nonparents as possible, Christian says, to hammer home the message again and again that improving the schools would raise property values. The answer was television advertising and aggressive door-to-door campaigning. Inevitably, though, it was the aggressive pursuit of parents that probably won the election, she says. (Political consultants say parents, particularly mothers, are usually strong supporters of bonds that include technology.)

Christian describes voter turnout for the election (12 percent) as "pathetic," but in the same breath she admits that the low turnout might have worked in the bond's favor. In Texas, polling sites are open for voters to cast their ballots three weeks before the official date of the election. The committee hustled to make sure early voting sites were set up at all of the county's 96 schools. It also helped that PTAs were hosting open houses at schools and teachers were holding parent-teacher conferences during that three-week period.

"The typical bond voter in Austin is well over 50 years old, with no kids in school, and conservative, so we needed to find a way to get parents to vote," Christian says. "Parents came to the school for other reasons, but when they got there they said, 'What the heck, we're here, let's go ahead and vote.'" Of the 38,368 people who voted, 17,912 voted early, and the early voters ran 3-1 in favor of the bond.

Timing is everything

"Technology is a scary thing to put on a bond," says Linda Nelson, president of the Plano, Texas, school board.

She should know. Three years ago, the district asked voters to approve a $135 million bond that had technology as a major feature. "That bond failed, and we were devastated," she recalls. "We went back to voters in 1994 . . . and totally left out the technology part, and the bond passed."

This year, Nelson says she wasn't sure what to expect when the board went back to voters yet again—this time with the largest school bond in district history, a total of $175 million, which included $44 million for new computers and software. Despite her worries, the bond passed.

What was the difference between the 1993 loss and this year's win?

"[The voters] could see technology wasn't some abstract idea anymore; the climate was right," Nelson says. "In '93 , the technology program was just starting, and [voters] couldn't see the vision of the program or anything tangible about it. This time, we were specific about what we wanted to enhance. We were able to say, 'If you vote for this, we will improve programs by doing so and so.'"

School activists in Monroe County, Wash., also bounced back this year—after suffering five consecutive defeats in school bond elections. One campaign lost by only eight votes; another time, bond supporters were handily defeated because the election followed a teacher strike.

Supporters were determined to change that bad-luck history this year. And to do so, they realized, would require a sophisticated analysis of what the community would support. To take the pulse of the community, supporters hired Voice Poll Communications of Everett, Wash., a company that uses telephone-polling technology to collect and analyze voter opinions.

"That was essential," says Julie Cavassa, cochair of Citizens for Monroe Public Schools, which lobbied for passage of the bond. "We had a preconceived notion that the most important thing to voters was cost. We learned they were really most concerned about what the money would be spent for."

The voice-poll service identified people who had voted in four of the last five elections and those who had just registered to vote. Using a prerecorded survey to which people could respond by pushing buttons on the telephone, the service asked both groups 16 questions, with each subsequent question adding more details about the bond proposal. The computer compiled the responses and produced a report showing what voters would support. The analysis divided the voters into parents and nonparents and contrasted the different levels of support in the two distinct communities—Monroe County and Maltby—that make up the school district.

Among the findings was that most voters generally supported putting more technology in the schools. So, although technology accounted for only a fraction of the $24 million bond, supporters emphasized its inclusion in the bond as much as possible, Cavassa says.

But "what works in one community might not work in another," warns Larry Tramutola, a California-based political consultant who works with school communities to win bond campaigns in a state that requires two-thirds of the voters to pass a bond. "Generally, technology is not the thing that is highest on the list in California," he says. "I don't know of any school district where their needs are so minimal" that they could propose a bond that includes only technology.

Proposals for upgrading science laboratories, on the other hand, are almost surefire winners, he observes. And for that reason, he says, school districts should broaden their definition of technology to include a broad spectrum of equipment, not simply computers and computer-related items.

Beating the opposition

In Cobb County, Ga., school activists sold the community on the idea that the district needed $221 million to improve its facilities and upgrade technology. But convincing voters they should support a school bond five times larger than the last one, approved five years earlier, was no easy task.

For one thing, four months before the election, economists in the state were saying it would be tough to pass the bond because interest rates were rising and voters were in a stingy mood. For another, opposition to the bond was strong and well organized. One opponent, according to the Atlanta Journal and Constitution, filed a complaint with state officials stating that then-superintendent Grace Calhoun instructed principals to lobby for passage of the bond.

(Georgia law, like that of most states, restricts public school employees from lobbying for or against bond referendums. Calhoun told the Atlanta newspaper she had not been aware of that law; following the complaint, the newspaper reported, Calhoun sent a memo instructing principals and administrators to give only unbiased information about the bond.)

Bond supporters immediately went on the offensive to counter the opposition.

"One of the most important things you have to do is make sure every community has something to gain from the bond," says Vivian Baldwin, former cochair of Kids Can't Wait, a political action committee that raised $40,000 to pass the Cobb County bond. "We came out with an outline of what each individual school—all 88 schools—was going to get. I highly recommend doing that."

Baldwin says a number of people in the community believed school technology was a waste of money. The committee countered those arguments, she says, by bringing back college students who had graduated from the Cobb County schools to talk about the need for more technology in the schools. These young men and women said they struggled when they first entered college because they didn't have a strong foundation in the use of technology.

Baldwin's daughter, for example, now a student at Vanderbilt University, took mostly advanced placement courses in high school, but she never set foot near a computer, her mother says. When her daughter first got to Vanderbilt, Baldwin says, she struggled in some classes because she hadn't been exposed to technology in public school.

"The message was that we were doing our community a disservice by not having the technology we needed," Baldwin says.

Early on, committee members were assigned to get in touch with former students at different colleges. Appropriately, they reached many of the college students by e-mail. As a consequence, she says, "we did very well with absentee ballots" and won a close election.

"The technology portion of the bond definitely helped it pass, because it was for all schools, to help them all get on-line," says Baldwin. "It was something everyone was going to get. That was key."

Kevin Bushweller *(kbushweller@nsba.org)* is a senior editor of *Electronic School*. Reprinted from *Electronic School*, September 1996

WHAT WORKS

Winning a school bond package that includes technology is much easier in some communities than in others—after all, each community's needs and attitudes are different. Even so, political consultants and school bond watchers say some universal rules apply to everyone.

One of the first things Jeannie Henry of the South Carolina School Boards Association tells school districts is not to take the bond to voters if the school board itself is divided between supporters and opponents of the bond. "You usually can't win [if that's the case]," says Henry, who frequently presents speeches and workshops on the topic. "We win very, very few referendums when the board is split."

Another rule, she says, is not to ask for excessive amounts of money, especially during difficult economic times. How do you know what is excessive? Henry says bond supporters must poll likely voters to determine the answer. Without polling, you risk not only overestimating, but even underestimating, the amount voters would be likely to support.

Henry offers these additional rules of preparation, especially for bonds that have technology attached:

- Don't confuse voters with a lot of technical terms and technology jargon. It only serves to alienate people.
- Don't oversell the need for technology. Bond advocates need to walk a fine line. On the one hand, they must show the community that students need the technology. But on the other, they must be careful not to exaggerate, which can keep voters from trusting their judgment.
- Don't be overconfident because there is no visible opposition to the bond. Emotional issues, such as the location of new schools, generally stir more opposition than technology in a bond package. But many voters still question the real educational value of technology, and you have to get your message to them about its benefits.

Supporters of a school bond for the Rochester Community Schools in Michigan say they learned several of those lessons last year when they lost a $110 million bond election that would have added $10 million in technology improvements to their schools.

The first problem was that a few members of the school board did not support the bond, according to Irene Connors, president of the board. Without a unified message from the board, she says, voters themselves were more likely to question its value.

Other problems emerged too.

"The public had a preconceived notion there was fluff in the bond," Connors says. The weekend before the election, she says, opponents of the bond waged a fiercely negative campaign. Just 48 hours before the election, opponents published newspaper advertisements making claims about the bond that Connors says were grossly exaggerated or factually incorrect. "We were not prepared for the misinformation that came out," she says. "It was just too late. I'm not sure what you should do when a community is waiting to trounce you."

In the past, playing up the technology component of a bond was not necessarily a helpful way to neutralize opponents, says Kent Price, a political consultant in California who helps schools win bond campaigns. But more recently, he says, technology has become a good selling feature of a bond. "The younger voters are starting to catch on," says Price. "They have a perception that technology is becoming increasingly more important. It's a reflection of our world now."—K.B.

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The Funding Puzzle

Looking for funding? Look at an education foundation

By Anne Ward

Attracting funds for school technology depends in part on how well a school or district organizes the effort. As state and federal funding dwindles, communities nationwide are discovering how to create their own money magnets in the form of foundations. These tax-exempt, 501(c)(3) corporations smooth the way of giving by raising public awareness, standardizing systems for donating, listing programs to be funded, and demonstrating that grants will be managed in a businesslike manner. Foundations also yield side benefits specific to the schools they fund.

Electronic School looked at the education foundations that support technology use in the schools of four communities: the Pendleton County Schools around rural Falmouth, Ky. (enrollment 2,650); the Cape Educational Technology Alliance, a consortium of 17 small school districts with a total of 35,000 students in rural Cape May County along New Jersey's Atlantic coastline; Saratoga Union School District (enrollment 2,060) in California's high-tech Silicon Valley; and Niwot High School (1,050 students) in the St. Vrain Valley School District near Boulder, Colo.

Alike yet different

Common to all four foundations are concerned parents, community support for technology implementation, and lots of volunteer effort—from boards of directors to people who sell raffle tickets. The differences reflect the individual communities and the foundation's goals.

For the 17 school districts in New Jersey's Cape Educational Technology Alliance (CETA), the impetus to join forces in 1995 was to find strength in numbers. Most of the districts serve fewer than 1,000 students; the largest enrolls 2,500. "Individually, few of the districts were able to attract funds," says Greg Rohrman, business administrator for the Wildwood Crest Board of Education and a member of the alliance board. "Folks giving grants want to make sure their dollars have the broadest possible impact," he says.

Without the countywide foundation, Rohrman adds, "there's no way we could have participated in the Challenge Grant" recently awarded by the U.S. Department of Education to 10 CETA districts in conjunction with others in Pennsylvania and New York. The five-year, $2,894,224 grant will support distance learning, bringing $25,000 into each of the 10 districts in Year One.

CETA also aims to facilitate technology planning, staff development, purchasing, and maintenance for county schools. Just getting representatives of all county districts to the table together—"something no one's going to do unless money's at stake," Rohrman says—has helped to generate new ideas, draw on a wider range of personnel, and better integrate curriculum countywide.

In Colorado, on the other hand, two high schools in the St. Vrain Valley School District have created their own foundations to meet individual needs. An existing community foundation—the St. Vrain Valley Education Foundation—funds minigrants for teachers in all the district's schools as well as other education efforts in the community, to the tune of from $10,000 to $30,000 each year. "But we were competing with 32 other schools for that fund," explains Niwot High School Principal Mary White. "Our needs are specific to our community, and we thought this way we'd have a better chance of getting something accomplished for our kids."

In Kentucky's Pendleton County Schools, the initial plan for the foundation was to fund student scholarships. But a growing emphasis on technology in the district and the state has led to earmarking most of the $8,000 distributed thus far for such equipment as videodisc players and video production equipment. The foundation has raised $13,000 toward its goal of awarding $50,000 in 1997 to the county's four schools. The grants will fund technology purchases that will complement state-supported school and district computer networks.

The bottom line behind all of these districts' interest in establishing foundations is community concern for stu-

dents' success, as epitomized by California's Saratoga Education Foundation. Created in 1982, the foundation "was founded by parents and staff who could see that state funding couldn't do things for our kids at the level we wanted," says foundation president Cyndy Riordan, a parent herself. These parents, many of them employed in high-tech industries, are intent on high-quality math, science, and technology education, and recently funded the purchase of updated equipment for technology labs and salaries for a K-5 science teacher, a kindergarten science aide, and a technology media specialist who will assist teachers at all grade levels.

Set-up hurdles

The boards of these foundations reflect the groups' founding principles. In many, the board is a mix of school and community business leaders, sometimes including a student representative as well. Saratoga's all-parent, 30-member board meets with a school board representative, the superintendent, and principals for advice. The mission of CETA's board, on the other hand, extends beyond fundraising, and the board includes a representative from a social service organization. At each meeting of the communitywide board of the St. Vrain Valley Education Foundation in Colorado, an invited minigrant recipient describes a funded project.

Setting up accounts and nonprofit status can be a hurdle. "Get yourself a crackerjack attorney and a crackerjack accountant," advises CETA's Rohrman. Interested community members and parents often provide those services gratis. Pendleton County's early legal work was done by an attorney who was on the verge of retirement and looking for volunteer work; parent-attorneys helped Niwot High School; and an attorney and an accountant on the foundation board managed CETA's set-up.

CATCHING FUNDERS' EYES

Trying to get the attention of funding organizations? You can improve your chances by knowing the trends in what the funders seek to support. Arlene Krebs—a New York-based educational telecommunications consultant and author of *The Distance Learning Funding Sourcebook* (Kendall/Hunt Publishing Co., 1996)—has this advice for school leaders:

• Focus on content, not technology. "Foundations do not fund technology per se, but do support those projects whose objectives closely relate to their individual priorities and goals," Krebs says. "Nearly all foundations support school reform, restructuring efforts, and Goals 2000. Technology facilitates those efforts and helps to foster community linkages. It's a means to an end."

• Train preservice and inservice K-12 teachers in the effective uses of technology. "The biggest area of need that the corporate giving programs, government agencies, foundations, and Bell operating companies recognize is the need for teacher training," says Krebs. "They know we need to educate a new generation of teachers, as well as assist existing classroom educators, in technology-based instruction. Otherwise, schools will not be able to effectively implement new equipment and services."

• Link K-12 with higher education for teacher training in technology use. "The funders want to see that partnership," Krebs says. "And teaming up with higher education lets K-12 schools tap into the services of higher ed's grant writers and development offices."

• Apply technology in certain curricular areas. "Math and science are still favorites, and environmentalism and multiculturalism receive special attention," says Krebs. "Funders also like integrating arts education across the curriculum, as described in the new arts education standards."

• Address special populations. "Funders support projects that work creatively with at-risk youth, particularly those that involve parents and community health and social agencies," Krebs says. "Many funders also support special programs for minorities, girls, and students who have physical or learning disabilities. The goals here are to integrate these students into the mainstream and to involve them particularly in math and science curricula."

• Focus on employment, career counseling, and the school-to-work transition. "Helping students develop job skills through mentoring projects or role modeling and exposing them to different career possibilities, with emphasis on math and science careers," says Krebs, "are examples of projects that organizations want to fund."

• Get communities onto the Internet and on-line services. "Technology companies and technology vendors support projects that link community organizations, as well as those that educate students to integrate online research into their curricular projects," says Krebs. "E-mail facilitates regional, national, and international contacts, allowing students and teachers to share their ideas and resources. Projects that link health and social service agencies through on-line communications with the school also are favored."

• Involve partners in the effort. "One of the greatest dilemmas is covering the ongoing operational costs of distance learning and technology-based instruction, particularly as federal and state funding decreases," Krebs acknowledges. "Schools applying for grants should address the problem and impress funders by partnering with other groups that commit to supporting the program with funding, in-kind contributions, and/or personal assistance, preferably beyond the life of the grant. Funders want to see sustainability."

For more information, call Krebs at New Orbit Communications, (718) 857-3717, or send e-mail to her at *funding@technogrants.com*. You can reach Kendall/Hunt Publishing at (800) 228-0810; or visit the book's site on the Internet's World Wide Web, *http://www.technogrants.com*. Additional Web sites with funding information include the Foundation Center (*http://fdncenter.org/*), GrantsWeb (*http://info-serv.rttonet.psu.edu/gweb.htm*); the American Communications Association's Grants and Fellowship Online Index (*http://www.uark.edu/depts/comminfo/www/grants.html*); and the U.S. Department of Education (*http://www.ed.gov/*).—A.W.

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Volunteerism permeates these groups, particularly in the hands-on work of fundraising. "Our chief beggars are our board members," says Pendleton County Assistant Superintendent Larry Sutton. Both holding fundraising events and balancing the books depend in large part on the generosity of interested supporters, including school staff members. Similarly, school foundations might forgo such amenities as stationery and descriptive brochures so as to funnel funds directly into schools.

To make the most of their funds, some foundations create an endowment. At St. Vrain's Niwot High School, for example, one-half of all contributions is invested to enable the foundation to be self-perpetuating.

Where the money comes from

Local style and tradition have much to do with how school foundations raise their funds. Memorial giving is at the core of fundraising in Kentucky's Pendleton County, where the largest town—Falmouth—has a population of just 3,000. Early in the foundation's history, one family started the trend by donating a $500,000 amphitheater to the school system as a memorial to a loved one. Now, memorial donors to the foundation—most of whom are school staff members—are recognized on a list posted on a district wall. Visitors to funeral parlors find donation envelopes printed with the foundation's name. The personalized style carries over to other fundraisers: golf outings, shopping spree raffles, a dinner buffet featuring graduate Phillip Sharp, a 1993 Nobel Prize cowinner for his discovery of split genes. Meanwhile, area banks make their own direct contributions to student scholarships—the foundation's original goal.

Direct solicitation is the key to Saratoga's success. The foundation raised $48,000 last year from a fundraising letter mailed to each local property owner. "Seven out of 10 parents in the district donate," reports Riordan. A one-day telephone solicitation raised $67,000, giftwrap sales brought in $52,000, and pledges for a middle school jogathon yielded $17,000. Sales of grocery store certificates and retailers' scrip brought in $43,000 last year, adds Riordan, who calls this a great fundraising strategy "since people use [certificates and scrip] on something they buy anyway."

Tapping the resources of Silicon Valley businesses takes several forms in Saratoga. "We have a lot of Hewlett-Packard parents," Riordan says, one of whom launched an e-mail campaign within the company that—together with the efforts of the foundation's grants committee—netted the district three of the four servers used for school networks. Hewlett-Packard triple-matches any contributions its employees make to the school district and, with other businesses, made $50,000 worth of in-kind donations of software, hardware, and expertise last year.

A separate business partnership program uses a personal approach to get local entrepreneurs involved, bringing in $7,700 last year. "For those who contribute as much as $1,000, we put their names and photos in the local paper, which donates half [what the space would cost], and we treat them to lunch with the superintendent," says Riordan. "They say it's a real eye-opener when they see what the schools do with the funds. About 50 percent who participate sign up to do it again."

None of the foundation representatives interviewed for this article strayed far beyond their own locality for funds, but all expressed interest in acquiring the skills and assistance to do so. "We need somebody on our board with some connections," muses Niwot High School's Mary White. CETA aims to hire someone to write grants someday, and Pendleton is "still looking for ideas of how to approach corporations and seek out those groups that have larger sources of funds," says Sutton. (See sidebar for tips.)

Whether the fund-raising method an education foundation uses is up close and personal or based on a proposal sent to a distant, unknown corporate executive, the goal is the same: finding the money that will help educators make optimum use of technology and, in the end, help young people learn. As they target parents' concerns and strive to form new alliances, foundations such as the ones profiled here are discovering how to focus community pride and national interest on the needs of their own schools.

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Let the Sunshine In

Using e-mail for board business? Check open-meeting laws

By Andrew Trotter

If you send an e-mail message to a member of the Seminole County (Fla.) school board, you're also sending one to Mike Barry, a reporter for the Orlando Sentinel. "Any e-mail that goes to the board goes to me," Barry says.

In December, at the education reporter's request, the school board arranged to forward all of its e-mail automatically to Barry and to his editor. Far from an invasion of privacy, the arrangement is really openness in government, says Seminole County's board president, Sandy Robinson. Florida's "Sunshine Law" gives the press the right to riffle through school board mail, and the Legislature has explicitly included electronic documents under that law.

Like their counterparts elsewhere who are taking advantage of e-mail and voice mail, Seminole County board members are working out the rules for the electronic age. They're weighing the implications of "sunshine" and open-meeting laws, as well as confidentiality and protocol.

Using district-owned laptop computers, the county's five board members can check their e-mail from home. "I've found personally it has cut down a tremendous number of phone calls," Robinson says. "It allows me to work on school board things on the weekend." She says most of the flow of information via e-mail and a new-voice mail system is between the board and the administrative staff, rather than among board members. For example, the administration will send e-mail to the board with the latest developments on a land purchase.

But Robinson says the board members are "painfully aware" that the sunshine law bars them from discussing among themselves in private "any issue that may come up for a vote." In electronic communication, they err on the side of caution: "If there's any concern, we just usually stop the conversation."

Out of the public eye

When board members take fewer pains, trouble can follow. In April 1995, two members of the Jefferson County (Colo.) school board accused then board President David DiGiacomo of violating state open-meetings law by leaving voice-mail messages for other board members. The messages reportedly said that DiGiacomo would testify, in his role as board president, in opposition to a school governance bill at a committee hearing of the Colorado General Assembly, according to the Rocky Mountain News.

The two board members, Jeffe Hall and Terri Rayburn, planned to testify in support of the bill as private citizens. To them, DiGiacomo's voice-mail messages amounted to a meeting—defined by the state open-meetings law as "any kind of gathering, convened to discuss public business, in person, by telephone, or other means of communication." Even though the board members are not on a conference call together, Hall told *Electronic School*, a board is holding deliberations without public involvement and oversight when "someone gets on [voice mail] and says, 'I think such and such about this issue,' and then two or three call back and say, 'I agree with that.'"

The *Rocky Mountain Times* agreed: "The Jeffco controversy shows how information technologies can be abused to short-circuit the public's ability to monitor and influence government decision making," said an editorial in that newspaper.

DiGiacomo, an attorney who has served on the board for five years, says his voice-mail messages were simply informing his colleagues, not soliciting their opinions. "I'm convinced there's no violation," he says. And, DiGiacomo adds, a written opinion by the board's attorneys backs him up. The opinion states that board members could "share information [electronically] about where we've been and what we've seen," he says. Indeed, aside from creating a brief public furor, his colleagues' accusation never went anywhere. Hall says she decided not to file a complaint against DiGiacomo.

But even if no one complains, a school board's electronic communica-

tion can raise public questions. The board of the Westside (Neb.) Community Schools, near Omaha, had used e-mail for just four months, says board President Helen Kelley, when "the newspaper called us up and said we're all breaking the law.

"I was quoted as laughing," she says, but counters, "I don't think, 'Hey, I've got e-mail, so I can do something illegal.'"

The call from the *Omaha World-Herald* led Kelley to research Nebraska law on the matter. The relevant statute was "really hard to find," she says, but "it did say you can't use electronic means to meet." A newspaper story next alerted the community to the theoretical possibility that the school board might violate the state's open-meetings law by using e-mail. And after that "red flag," the six Westside board members took a serious look at its use of e-mail, Kelley says. Legal counsel advised the board that the law prohibits members from exchanging opinions among themselves outside of a public meeting.

Conducting board business out of the public eye might have a place, however, when it comes to matters that must be kept confidential. Jefferson County's DiGiacomo points out that Colorado law does allow board members to use e-mail and voice mail for "some other areas that are absolutely screened from public scrutiny—matters of contract, personnel matters." His board, for example, has discussed electronically a recent problem with a high school principal—"whether he's doing his job" and whether the superintendent should intervene.

But other board members balk at discussing confidential matters electronically, due to the ease with which messages can be forwarded to others—even worldwide. The Westside and Seminole County boards both avoid confidential or sensitive information on e-mail. "There is some access to [e-mail] that's out of your control," says Kelley. "Whatever you have on there—be sure it is something you wouldn't mind on the front page of the newspaper."

A useful tool

Even with restricted use, e-mail is valuable, board members who use it agree. Kelley forwards her official correspondence via e-mail to the board secretary, who prints it on school board stationery. And like Seminole County's Robinson, she limits messages to other board members to scheduling future events or alerting her colleagues to such events as a recent television appearance by their superintendent.

Most of her exchanges of substantive information are with district administrators, she says. And to avoid the charge of using e-mail as a back-door route to meddling in administrative decisions, she forwards to her superintendent a copy of any message she sends to a staff member.

In a countywide district that has 5,000 children and 35,000 residents, Kelley says electronic communication might eventually help her colleagues stay in contact with their constituents. The efficiency of the board's twice-monthly meetings might also be increased, she says, if the board president and the superintendent can exchange drafts of the meeting agendas via e-mail.

"Wired" board members advise others to seek legal guidance to determine how to stay in compliance with state open-meeting laws. To date, virtually no case law has directly addressed questions of electronic communication among public officials, although that might soon change, according to legal experts.

Another word of practical advice comes from Bruce Douglass, superintendent of the Suffield (Conn.) schools, who suggests that board members put electronic communication into a broader context: "E-mail isn't an entity by itself; it's part of a communications process. You have to have some kind of communications management system." Such a system, Douglass suggests, would include guidelines for what information should be transmitted by different technological methods—and to whom—as well as how to ensure that information is accurate. "The worst thing is to be uncommunicative; the next-to-worst thing is to put out bad information," Douglass says.

Finally, as with anything else, board members who use e-mail and voice mail must respect public perceptions of their activities. "As a publicly elected official," says Westside's Kelley, "I wouldn't want to do anything to raise questions about how I operate. You just don't want to jeopardize the reputation of the district."

Andrew Trotter is a former associate editor of *Electronic School*. Reprinted from *Electronic School*, June 1996.

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The good, the bad, and the ugly

Technology consultants come in all varieties

By Kathleen Vail

About $2.2 billion is coming your way to connect your classrooms to the Internet and keep them hooked up. The 1996 Federal Telecommunications Act promised schools "universal service," which a federal and state board recently translated into deep discounts for telecommunications and Internet services. The discounts will be paid for by communications companies (and passed along to the consumer).

Suddenly, you're standing on the Information Superhighway—unexplored territory for many school board members. Technology that seemed out of reach may now be affordable with the telecommunications discounts. And if your school district is like many, you're already plunking down millions in hard-won bond money to get new technology into the hands of your teachers and students.

Now your fledgling technology program is poised to explode. Dozens of decisions face you: cable or wireless, connections, video, software, hardware, wide-area networks, local-area networks, long-distance learning. . . . You're a deer in the scopes of technology salesmen, who want to convince you their products are just what you need.

What should you do? You might consider hiring a technology consultant to help steer you through the labyrinth of techno choices. A technology consultant can bring expertise and specialized knowledge that might be lacking on your staff. Houston technology consultant Stuart Herbst compares consultants to architects. If you were building a new school, Herbst says, you would select the best architect you could find to design it. "You need to follow the same path through the maze of technology planning," he says.

Consultants will do as much or as little as you're willing to pay for. Their services run the gamut from drawing up a technology plan for the district to helping evaluate and select hardware and software, arranging for teacher and administrator training, managing bids, and overseeing installation of systems. Consultants can work with your architect to make sure a new or renovated school building can handle the technology you've chosen. Also, they can audit your current technology plan to see if it's working as you intended.

But before you run out and sign on the dotted line, beware: Not all technology consultants are created equal. As school technology has grown, so has the number of people who want to tell you what to do with it. Not all of them know what they're doing, and not all of them are right for your school district. "There are a lot of bad apples out there," says Herbst.

To help you find the good apples—and protect yourself against unscrupulous or incompetent consultants—*Electronic School* sought advice from a number of technology consultants and school technology coordinators. Here's what they told us:

• **Make sure the consultant is not working for a hardware or software vendor.** Consultants associated with vendors often are less expensive than independent ones; they make their money through a percentage of the sales of the products they sell you. Some bigger companies, like IBM, will throw in the consulting for practically nothing, says Herbst. Vendor consultants won't tell you if their products aren't going be appropriate for your plan or your school. Instead, they'll fit the plan to their products.

"It's a biased opinion," says James Carlini, a technology consultant in Chicago. "Your solution will be tied to their service."

If you're aware that the consultant is also a vendor and you're sure that the district wants to go with a certain product, that's fine. If not, choose an independent consultant, who will give you a range of vendors to make sure you get the system you want at a competitive price.

If you ask, most consultants will tell you if they are affiliated with vendors. As a precaution, Herbst suggests looking at the last three jobs the consultant performed to see if he or she had been repeatedly selling the same brands. And if you're really concerned, you can write

into your contract with the consultant a clause specifying that the designer of the technology plan cannot sell the equipment for it.

• **Get references from the last three of the consultant's jobs.** Calling school people who have worked with a consultant before is a good idea for several reasons. For starters, you can find out how long the consultant has been in business, an important factor when you're considering whether the consultant will go the distance with you or disappear halfway through the job. Reference checking also gives you the chance to find out if the consultant is a good fit with your district. And, you can find out if the consultant was comfortable working with a technology committee and if he or she got along with the district's technology coordinator.

Ask references if the consultant's work was done on time, suggests Herbst. Find out if the district encountered any surprises when the plan was being put in place, particularly surprises that cost extra money. Did the consultant save the district money? Was the consultant a help or a hindrance? Would the district consider hiring this person again?

While you talk to other school people, keep in mind that you want a plan that will fit your school, not a rehash of what was done at a district across town. Some consultants, says Carlini, take a cookie-cutter approach to school technology. "If he applies what was done at another school, it will be a lot less work for him," says Carlini.

• **Make sure you and the consultant understand each other.** When you interview, have a fairly complete idea of what you want the consultant to accomplish, remembering that the consultant will be able to suggest things, as well. If you expect the consultant to make site visits, sit in on technology committee meetings, make board presentations, and talk to community members, you should spell out those expectations right away. That way, too, the consultant can give you an accurate estimate of what to charge you for services provided.

"Talk about the goals of the superintendent and the board members," says Richard Hardt, a technology consultant in Prairie Village, Kan. "Identify where a consultant can take you." Some school districts want an ongoing relationship with their consultant, says Hardt. Others want the consultant to come in for one purpose, such as installing a local area network in a building.

• **Find out whether the consultant specializes in a single area of technology.** Like a vendor consultant, a single-note consultant is apt to suggest using the technology he or she knows best, rather than considering other options that might be less expensive or easier to use. "Look at the depth and breadth of what they've worked on," says Carlini. "You should get a person looking at the overall needs of the district."

• **Don't hire a "techno twit."** That's what Gil Noble, assistant superintendent for technology at Plano, Texas, schools, calls someone who knows all about technology except how to make it work with people. A school technology plan is not just about nuts, bolts, and hardware, Noble says—it's also about people. Herbst agrees. "The most successful technology planners are the ones who are more concerned about professional development and training," he says. A consultant should take the time to understand the culture of your school district. That includes talking to teachers and administrators about their level of comfort with technology and their needs in the classroom. An expensive technology system with all the latest bells and whistles is worthless if the teachers won't use it.

• **Do hire a consultant with a background in education.** Education is a specialized field, and consultants need to know something about what's going on the classroom before they can design an appropriate technology plan. "You can't impose the business model on education," says Herbst. Consultants who work with banks or insurance companies won't understand curriculum issues. "Find someone who knows school culture," says Noble. "Schools sometimes want to hire IBM, but they won't know the culture."

On the other hand . . .

• ***Don't*** **hire a consultant with a background in education.** A consultant from the business world will bring a fresh eye and new ideas to the schools, says Carlini, who dissented from the other three consultants on this subject. "You won't have that creativity if someone has focused 30 years in education," he says. "You might have a better chance of getting someone good if you go outside education."

When it comes to putting a school technology plan in place—as these last two points show—authorities don't necessarily agree on the best way to go. And what works well in one school district might not be the answer in another. In the end, it's up to your board and staff, perhaps with a consultant's help, to chart the right course.

Kathleen Vail *(kvail@nsba.org)* is an associate editor of *Electronic School.* Reprinted from *Electronic School,* March 1997.

The electronic village

Telecommunications is changing the school board's role

By Arthur D. Sheekey

Your role as a school board member is about to change: The Telecommunications Act of 1996 is carving out a new role for school boards as service providers or brokers of on-air and online programming that will support an expanded community of learners. In designating public schools as a focal point for networking communities, Section 254 of the Telecommunications Act compels school boards to take a leadership role in ensuring that all households, as well as all schools, have access to educational services. Before long, in other words, an entire community—not just its school-age kids—will have hands-on access to the new technologies.

Already, the wired school is becoming an accepted notion: The public seems willing to spend time and money to wire schools and equip them with modern computers linked to advanced telecommunications networks. States are shouldering much of the financial burden, and technology companies are also pitching in. And when the wired school is commonplace, the wired community won't be far behind.

Still, in the midst of all this ferment, several legitimate policy questions remain unanswered or even unacknowledged—especially regarding plans to create fully networked communities or electronic villages. What assurance is there, for example, that advanced networked services will make teachers' jobs any easier? Some might argue that the job will become more demanding as parents and students gain greater access to teachers. How does that increased access factor into the teacher contract? Will teachers have to be paid more if they are spending more time interacting with parents and students outside the confines of the usual school day? That's a policy issue you and your fellow board members will need to examine closely.

You'll also need to give serious consideration to the socioeconomic ramifications of establishing greater technological links between home and school. Many poor families cannot afford to buy the technology that allows their children to work on school projects at home. Clearly, kids from wealthier families will have the edge—not only because they will be more likely to have access to telecommunications at home, but because their parents, by and large, are more technologically savvy than poorer parents.

As a policy maker working to bridge the technological gap between home and school, you cannot ignore this imbalance. You must find ways to increase the opportunities for poorer kids, being careful not to limit the power of those who already have the technology in the name of righting the imbalance.

Equally important, you must recognize that the voting public can make or break a good technology initiative. In many communities, there is a growing and reasonable concern that electronic networks are not worth the investment because they provide limited services to a limited number of families. Garnering wide public support in such a situation is difficult. As a consequence, you have to recognize that people who are not directly associated with the schools are nevertheless important constituents.

One approach is to offer education and information services to adults who no longer have children in school, to senior citizens, and to parents who send their children to private schools. Show them that they, too, can benefit from the power of an electronic village. By bringing these constituents into the fold, you will help transform them from technological cynics into cyber cheerleaders. But it will take policy leadership to make that happen.

Your policy role

Where can school boards find answers to the difficult policy questions surrounding technology? Two recent publications offer help. The first—*Creating a Learning Society: Initiatives for Education and Technology*, a report from the Aspen Institute's Forum on Communications and Society—provides an analysis and a set of recommendations about the power of telecommunications technologies to challenge the traditional ways of teaching children. Participants at the Aspen forum urged local communities to use emerging networks for interconnecting families and creating greater cooperation among com-

munity-based organizations. Ensuring equitable access to electronic services, they say, may require the creation of new "access points" to education and public information services. Such access points might include local libraries or community centers equipped with computer workstations. (For more information, call Amy Gamer at 202-467-5818.)

The second publication—*Creating Learning Communities: Practical, Universal Networking for Learning in Schools and Homes*, a report from the EPIE Institute in Hampton Bays, N.Y.—provides a long list of realistic suggestions for achieving the full benefits of networked services. This report pays particular attention to a number of major concerns, including how networking can be effectively used to strengthen at-home learning for students; how parents can support at-home learning; and how teachers can involve parents in their kids' learning. In addition, the authors challenge local school boards to ensure that electronic enhancements of at-home learning are accessible to all students and parents. (For more information, call Ken Komoski at 516-728-9100.)

In addition, the 1994 report by the National Education Commission on Time and Learning, *Prisoners of Time*, serves as a good reminder that educational services can no longer be limited to the school site or constrained by the requirements of 180 days a year and six hours of classroom time a day. In most local communities, many educational resources and sources of public information currently lie fallow. Each community has a wealth of educational services that can be up-linked to an intranet or local web site. For example, local public television stations typically offer online services. Such local entities, which offer education programs and valuable public information, could merge with school programs to integrate services for local families.

Of course, the local service providers will have to compete with a cascade of other services, which may be more entertainment-oriented than educational. That is why you need to meet the grand visions of commercial entrepreneurs with considerable foresight and planning—even, perhaps, some skepticism.

Your board's first step should be to engage a wide range of community-based organizations in an effort to strengthen the community's learning resources, including resources available in schools, community access points, and individual households. Also, people throughout the community must gain hands-on experience with network technologies. Otherwise, the opportunity to foster a wide range of public support—and to build community expertise—will be lost.

Your advocacy role

The typical student spends more than 5.6 waking hours a day at home—many of those hours in front of a television set. The private telecommunications sector has its eye on these kids: Marketing surveys suggest that the major educational software providers expect greater profits from the home market than from the school market. A predictable outcome of advanced universal service, then, will be a deluge of interactive games and home-shopping channels. Neither federal nor state agencies are seriously considering the importance of identifying and making available worthwhile and affordable educational services.

That leaves the field open for community leaders and school boards to step in. Extending public education services to households must become a higher priority. And who better than local education leaders like you to be strong advocates for directing the benefits of electronic services to individual households?

You will continue to be responsible for deciding what educational materials and services will be available to students, not only in the classroom during school hours, but beyond the traditional constraints of time and place. Making such choices is not an easy task, but it must become one of your top priorities.

No one network solution is right for all schools and communities. But a number of guidelines are available to help your district avoid making mistakes. The EPIE report, for example, provides a snapshot of do's and don'ts, and its authors urge school boards not to take on this task without the help and support of other community leaders and groups. An integrated "community server" of public services has a greater chance to survive and compete than an education server or school web page. Other resources in the community can lend assistance, and local businesses may underwrite some of the operational costs.

Techno advocates say, "If you build it, they will come." That kind of faith might be necessary to proceed with networked services, but it is not enough. Mechanisms should be in place to monitor the technical performance of networks and determine who's benefitting from them. For example, if a network is available solely to classrooms and households with advanced work stations, it will have little or no effect on equalizing educational opportunities for all children.

Actively creating new visions for a learning community or electronic village makes a whole lot more sense than sitting back and waiting to measure the benefits and outcomes of a wired school or classroom. For the sake of our children, let's admit that wiring a school is a worthwhile objective but not a remedy for inadequate learning. What we really need to do is examine the needs and resources of our communities and plan to network the services that are most needed.

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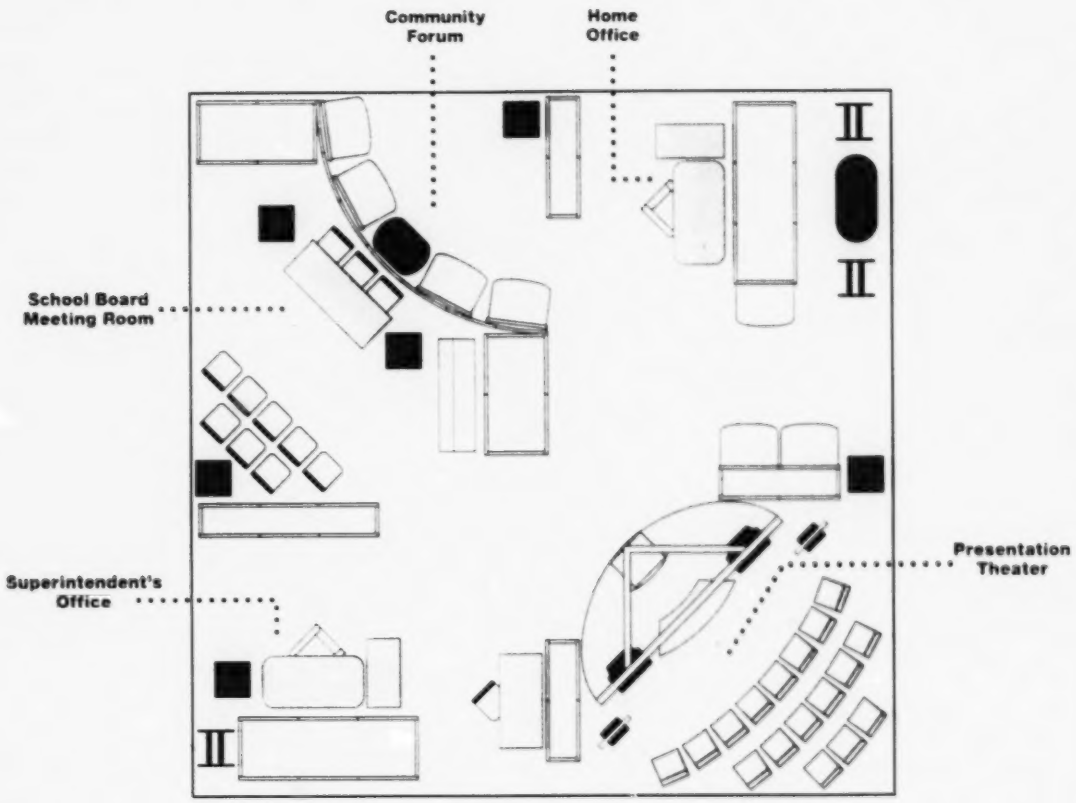
The School Board of Tomorrow



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